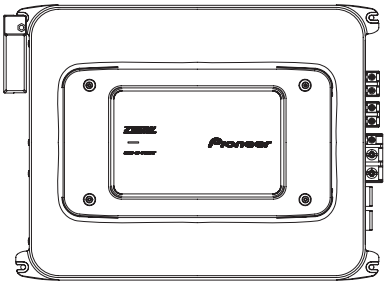
Pioneer

Service Manual



GM-5400T/XJ/UC

ORDER NO.
CRT4251

BRIDGEABLE TWO-CHANNEL POWER AMPLIFIER

GM-5400T /XJ/UC
GM-5400T /XJ/EW5
GM-5400T /XJ/ES

For details, refer to "Important Check Points for Good Servicing".

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ⓒ**PIONEER CORPORATION 2008**

K-ZZZ. NOV. 2008 Printed in Japan

SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safety repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safety, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains certain electrical parts contain chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

Where in a manufacturer's service documentation, for example in circuit diagrams or lists of components, a symbol is used to indicate that a specific component shall be replaced only by the component specified in that documentation for safety reasons, the following symbol shall be used:

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SERVICE PRECAUTIONS

1.1 SERVICE PRECAUTIONS

1. You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
2. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.

1.2 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
  Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.

- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C.
  Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:
- Parts numbers of lead-free solder:
  GYP1006 1.0 in dia.
  GYP1007 0.6 in dia.
  GYP1008 0.3 in dia.

2. SPECIFICATIONS
2.1 SPECIFICATIONS

GM-5400T/XJ/UC

Power source ..... 14.4 V DC (10.8 V to 15.1 V allowable)
Grounding system ..... Negative type
Current consumption ..... 30 A (at continuous power, 4 ?)
Average current drawn ..... 10 A (4 Ω for two channels)
19 A (4 Ω for one channel)
Fuse ..... 30 A × 2
Backup current ..... 0.03 mA or less
Dimensions (W × H × D) ... 265 mm × 62 mm × 346 mm
(10-3/8 in. ×2-1/2 in. × 1 ft. 2 in.)
Weight ..... 3.8 kg (Leads for wiring not included)
Maximum power output ..... 250 W × 2 (4 Ω) / 760 W × 1 (4 Ω)
Continuous power output .. 125 W × 2 (at 14.4 V, 4 Ω, 20 Hz to 20 kHz 0.2% THD)
380 W × 1 (at 14.4 V, 4 Ω, 20 Hz to 20 kHz 0.8% THD)
190 W × 2 (at 14.4 V, 2 Ω, 20 Hz to 20 kHz 0.8% THD)
Load impedance ..... 4 Ω (2 Ω to 8 Ω allowable)
(Bridge connection: 4 Ω to 8 Ω allowable)
Frequency response ..... 10 Hz to 50 kHz (+0 dB, –1 dB)
Signal-to-noise ratio ..... 95 dB (IHF-A network)
Distortion ..... 0.03 % (10 W, 1 kHz)
Separation ..... 70 dB (1 kHz)
Low pass filter:
Cut off frequency ..... 80 Hz
Cut off slope ..... –12 dB/oct
Bass boost:
Frequency ..... 50 Hz
Level ..... 0 dB/6 dB/12 dB
Gain control:
RCA ..... 200 mV to 6.5 V
Speaker ..... 0.8 V to 26 V
Maximum input level / impedance:
RCA ..... 6.5 V / 22 k Ω
Speaker ..... 26 V / 90 k Ω

CEA2006 Specifications

Power output ..... 125 W RMS × 2 Channels (at 14.4 V, 4 Ω and ≦ 1 % THD+N)
380 W RMS × 1 Channels (at 14.4 V, 4 Ω BRIDGE and ≦ 1 % THD+N)
190 W RMS × 2 Channels (at 14.4 V, 2 Ω and ≦ 1 % THD+N)
S/N ratio ..... 75 dBA (reference: 1 W into 4 Ω)

Notes

- Specifications and the design are subject to modifications without notice due to improvements.
- The average current drawn is nearly the maximum current drawn by this unit when an audio signal is input. Use this value when working out total current drawn by multiple power amplifiers.■

Power source	14.4 V DC (10.8 V to 15.1 V allowable)
Grounding system	Negative type
Current consumption	30 A (at continuous power, 4 Ω)
Average current drawn	10 A (4 Ω for two channels) 19 A (4 Ω for one channel)
Fuse	30 A × 2
Backup current	0.03 mA or less
Dimensions (W × H × D)	265 mm × 62 mm × 346 mm
Weight	3.8 kg (Leads for wiring not included)
Maximum power output	250 W × 2 (4 Ω) / 760 W × 1 (4 Ω)
Continuous power output	125 W × 2 (at 14.4 V, 4 Ω, 20 Hz to 20 kHz 0.2% THD) 380 W × 1 (at 14.4 V, 4 Ω, 20 Hz to 20 kHz 0.8% THD) 190 W × 2 (at 14.4 V, 2 Ω, 20 Hz to 20 kHz 0.8% THD)
Load impedance	4 Ω (2 Ω to 8 Ω allowable) (Bridge connection: 4 Ω to 8 Ω allowable)
Frequency response	10 Hz to 50 kHz (+0 dB, –1 dB)
Signal-to-noise ratio	95 dB (IEC-A network)
Distortion	0.03 % (10 W, 1 kHz)
Separation	70 dB (1 kHz)
Low pass filter:	
Cut off frequency	80 Hz
Cut off slope	–12 dB/oct
Bass boost:	
Frequency	50 Hz
Level	0 dB/6 dB/12 dB
Gain control:	
RCA	200 mV to 6.5 V
Speaker	0.8 V to 26 V
Maximum input level / impedance:	
RCA	6.5 V / 22 k Ω
Speaker	26 V / 90 k Ω

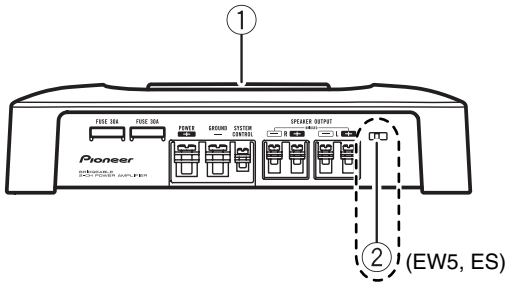
Notes

- Specifications and the design are subject to modifications without notice due to improvements.
- The average current drawn is nearly the maximum current drawn by this unit when an audio signal is input. Use this value when working out total current drawn by multiple power amplifiers.■

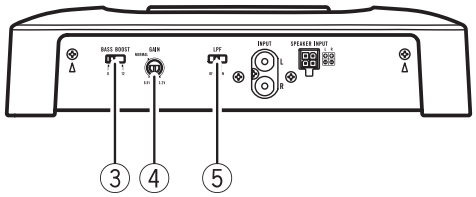
2.2 PANEL FACILITIES

What 's what

Front side



Rear side



To adjust the switch, use a flathead screwdriver if needed.

① **Power indicator**
The power indicator lights up to indicate power ON.

(EW5, ES)

② **BFC (beat frequency control) switch**
Located front side the unit. If beats are audible while listening to MW/LW broadcasts via car stereo, change the **BFC** switch using a small flathead screwdriver.

③ **BASS BOOST (bass boost level control) switch**
You can select a bass boost level from 0 dB, 6 dB and 12 dB.

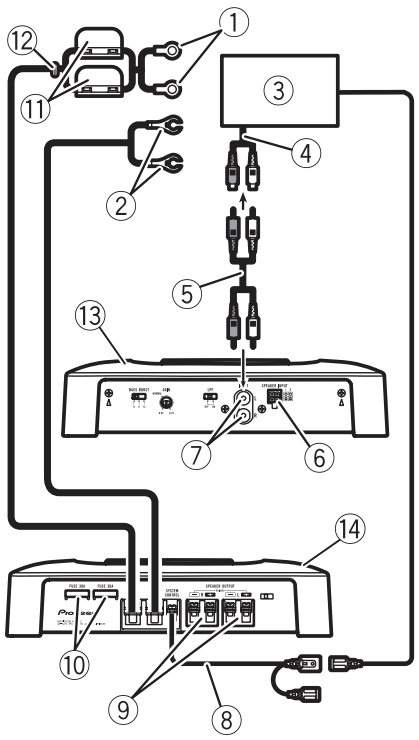
④ **GAIN (gain) control**
If output remains low, even when the car stereo volume is turned up, turn controls to lower level. If distortion occurs when the car stereo volume is turned up, turn these controls to higher level.

- For use with an RCA equipped car stereo (standard output of 500 mV), set to the **NORMAL** position. For use with an RCA equipped Pioneer car stereo, with max. output of 4 V or more, adjust level to match that of the car stereo output.
- If you hear too much noise when using the speaker input terminals, turn the gain control to higher level.

⑤ **LPF (low-pass filter) switch**
Switch the settings based on the connected speaker.

- When the Subwoofer is connected:
  Select **ON**. This eliminates high range frequency and outputs low range frequency.
- When the full range speaker is connected:
  Select **OFF**. **OFF** outputs the entire frequency range.■

2.3 CONNECTION DIAGRAM



① Special red battery wire
RD-223 (sold separately)
After completing all other amplifier connections, finally connect the battery wire terminal of the amplifier to the positive (⊕) battery terminal.

② Ground wire (Black)
RD-223 (sold separately)
Connect to metal body or chassis.

③ Car stereo with RCA output jacks (sold separately)

④ External output

If only one input plug is used, do not connect anything to RCA input jack B. (ES)

⑤ Connecting wire with RCA pin plugs (sold separately)

⑥ Speaker input terminal

⑦ RCA input jack

⑧ System remote control wire (sold separately)
Connect male terminal of this wire to the system remote control terminal of the car stereo (**SYSTEM REMOTE CONTROL**). The female terminal can be connected to the auto-antenna relay control terminal. If the car stereo lacks a system remote control terminal, connect the male terminal to the power terminal via the ignition switch.

⑨ Speaker output terminals

⑩ Fuse (30 A) × 2

⑪ Fuse (30 A) × 2

⑫ Grommet

⑬ Rear side

⑭ Front side ■

3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

To keep the product quality after servicing, please confirm following check points.

No.		Procedures	Item to be confirmed
1		Confirm whether the customer complain has been solved.	The customer complain must not be reappeared. Audio and operations must be normal.
2		Check the output sound.	Audio and operations must be normal.
3		Appearance check	No scratches or dirt on its appearance after receiving it for service.

See the table below for the items to be checked regarding video and audio:

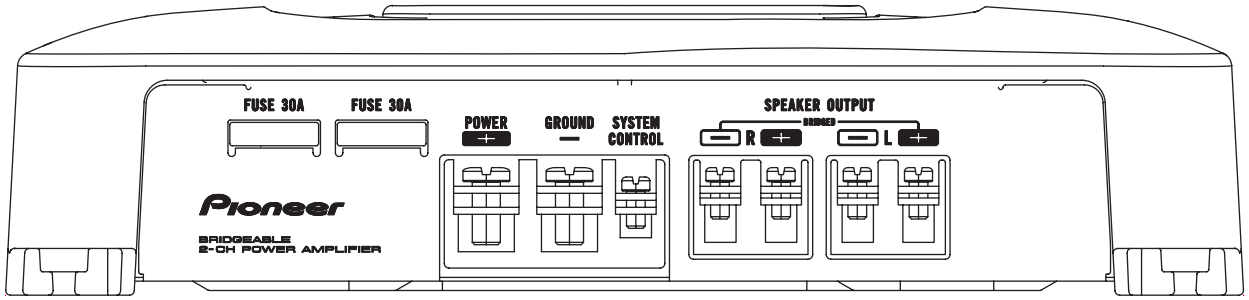
Item to be checked regarding audio
Distortion
Noise
Volume too low
Volume too high
Volume fluctuating
Sound interrupted

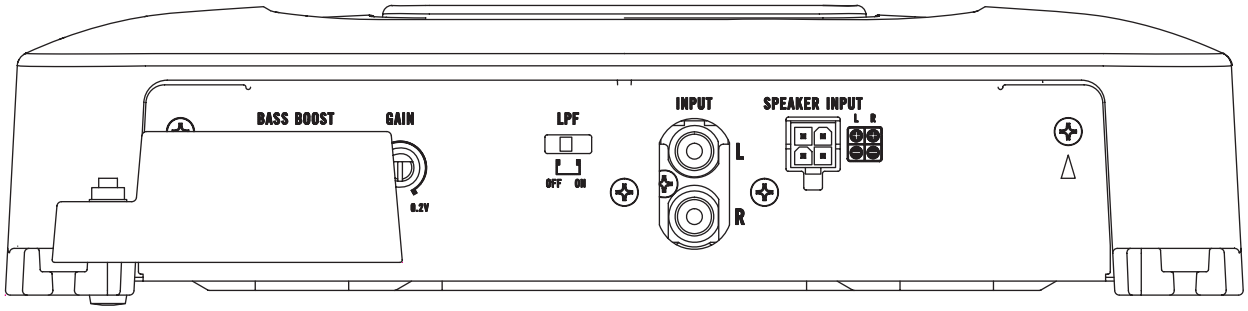
4. BLOCK DIAGRAM

There is not information to be shown in this chapter.

5. DIAGNOSIS

5.1 CONNECTOR FUNCTION DESCRIPTION





6. SERVICE MODE

There is not information to be shown in this chapter.

7. DISASSEMBLY

● Removing the Chassis (Fig.1)

1 Remove the two screws.

2 Remove the six screws and then remove the Chassis.

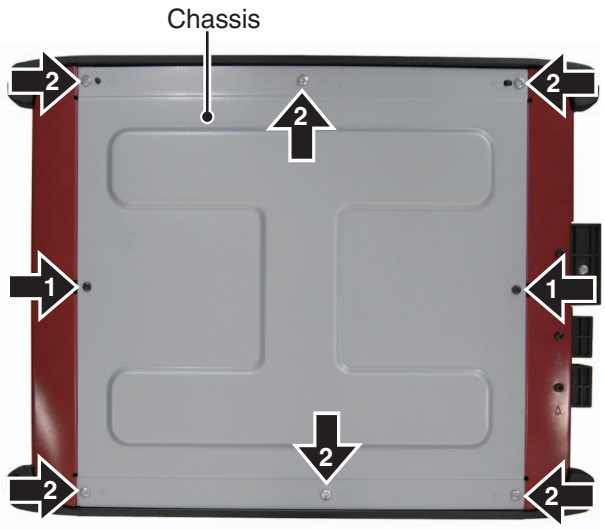


Fig.1

● **Removing the Amp Unit (Fig.2)**

1 Remove the twenty four screws and then remove the Chassis.

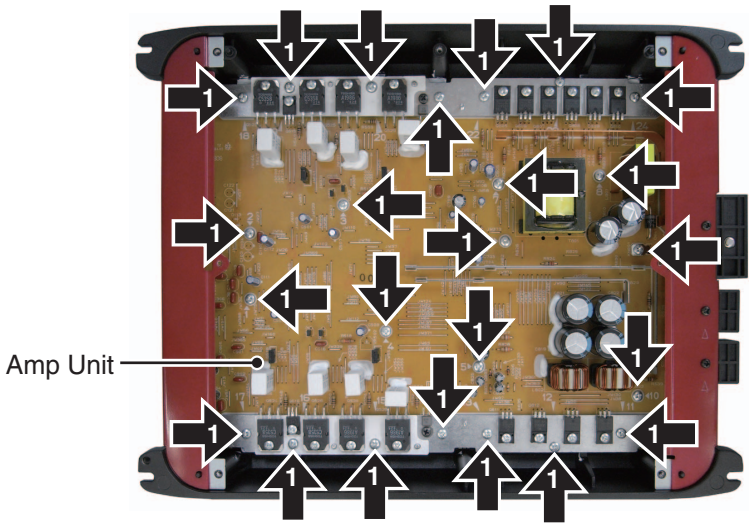
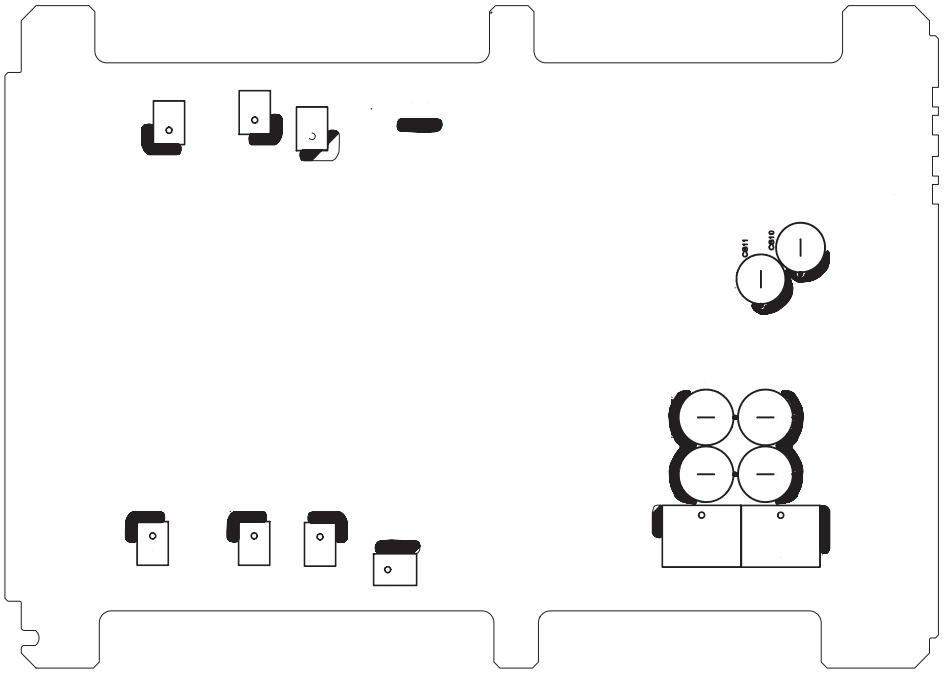


Fig.2

Bonding Position
GYL1006



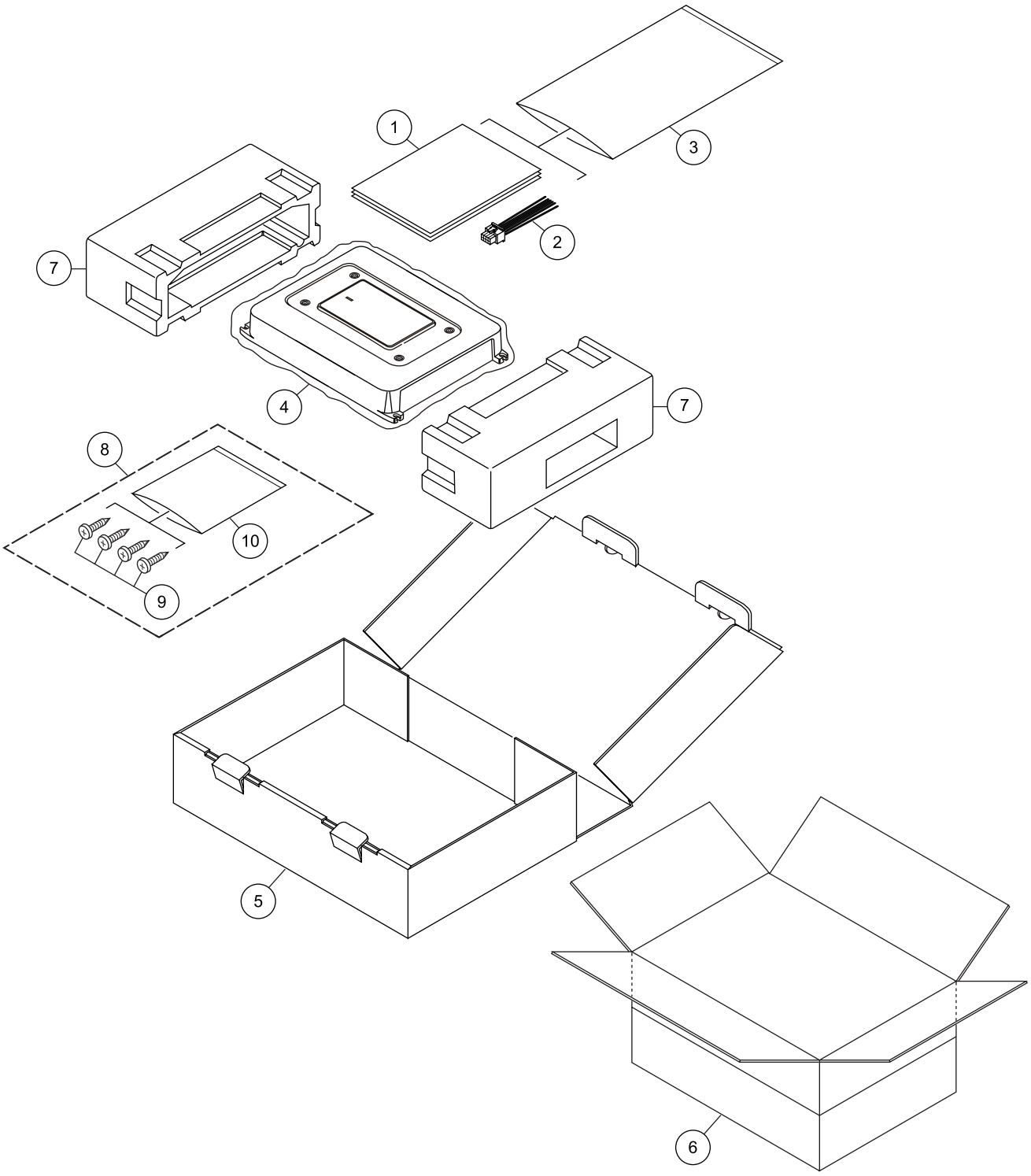
8. EACH SETTING AND ADJUSTMENT

There is not information to be shown in this chapter.

9. EXPLODED VIEWS AND PARTS LIST

NOTES : • *Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.*
• *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
• *Screw adjacent to▽ mark on the product are used for disassembly.*
• *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions,apply as you think it appropriate.)*

9.1 PACKING



(1) PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
*	1-1	Caution Card	See Contrast table (2)
*	1-2	Warranty Card	See Contrast table (2)
	1-3	Owner's Manual	See Contrast table (2)
	2	Cord Assy	CZD5517
	3	Polyethylene Bag	CZE2962
	4	Polyethylene Bag	See Contrast table (2)
	5	Unit Box	See Contrast table (2)
	6	Contain Box	See Contrast table (2)
	7	Cushion	CZH6698
	8	Screw Assy	CEA5330
	9	Screw	BYC40P180FTB
*	10	Polyethylene Sheet	CNM4338

(2) CONTRAST TABLE

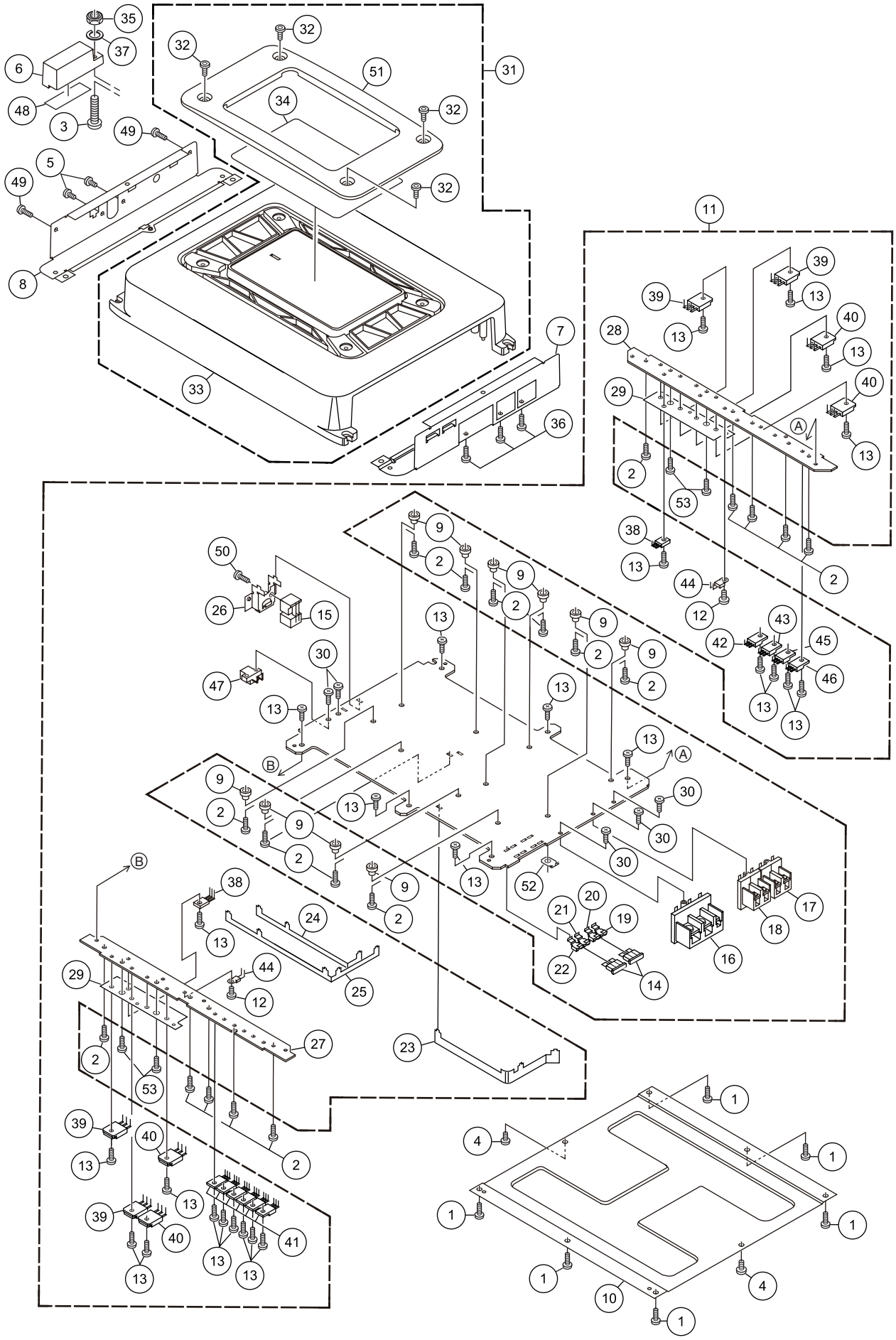
GM-5400T/XJ/UC, GM-5400T/XJ/EW5 and GM-5400T/XJ/ES are constructed the same except for the following:

Mark	No.	Description	GM-5400T/XJ/UC	GM-5400T/XJ/EW5	GM-5400T/XJ/ES
*	1-1	Caution Card	CZR5560	Not used	Not used
*	1-2	Warranty Card	CRY1276	CRY1279	Not used
	1-3	Owner's Manual	CZR5552	CZR5551	CZR5553
	4	Polyethylene Bag	CEG1351	*CZE2987	*CZE2987
	5	Unit Box	CZH6684	CZH6682	CZH6686
	6	Contain Box	CZH6685	CZH6683	CZH6687

Owner's Manual,Installation Manual

Part No.	Language
CZR5552	English, French, Spanish(Espanol)
CZR5551	English, Spanish(Espanol), German, French, Italian, Dutch, Russian
CZR5553	English, Spanish(Espanol), Portuguese(B), Arabic

9.2 EXTERIOR



(1) EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BBZ30P100FTC
	2	Screw	BBZ30P120FTC
*	3	Screw	See Contrast table (2)
	4	Screw	BSZ26P060FTB
	5	Screw	BSZ30P060FTB
	6	Holder	See Contrast table (2)
	7	Plate	CZN8435
	8	Plate	CZN8438
	9	Spacer	CZN8440
	10	Chassis	CZN8441
	11	Amp Unit	See Contrast table (2)
	12	Screw	BBZ30P080FTB
	13	Screw	BBZ30P100FTC
⚠	14	Fuse(30 A)	CEK1330
	15	Pin Jack(JA101)	CKB1068
	16	Terminal(JA801)	CKE1055
	17	Terminal(JA501)	CKE1057
	18	Terminal(JA502)	CKE1057
	19	Terminal(JA802)	CND2458
	20	Terminal(JA803)	CND2458
	21	Terminal(JA804)	CND2458
	22	Terminal(JA805)	CND2458
*	23	Bas Bar(1)	CZN8425
*	24	Bas Bar(5)	CZN8429
*	25	Bas Bar(3)	CZN8427
	26	Holder	CZN8430
*	27	Heat Sink	CZN8432
*	28	Heat Sink	CZN8433
	29	Sheet	CZN8443
	30	Screw	PPZ30P100FNN
	31	Case Unit	See Contrast table (2)
	32	Screw	BBZ30H060FTB
*	33	Heat Sink	See Contrast table (2)
	34	Plate Assy	See Contrast table (2)
	35	Nut	See Contrast table (2)
	36	Screw	PPZ30P100FTB
*	37	Washer	See Contrast table (2)
	38	Transistor(Q515,516)	KTC3114
	39	Transistor(Q523,524,525,526)	2SC5358
	40	Transistor(Q527,528,529,530)	2SA1986
	41	Transistor(Q805,806,807,808,809,810)	FKV550N
	42	Transistor(Q811)	KTC2026
	43	Transistor(Q812)	KTA1046
	44	Thermistor(TH701,702)	CCX1057
	45	Diode(D801)	FML22S
	46	Diode(D802)	FML22R
	47	Socket(J1)	CKM1463
*	48	Seal	CAN3984
	49	Screw	BBZ30P080FTB
	50	Screw	PPZ30P100FTB
	51	Plate	CZN8417
	52	Earth Terminal(KN801)	CZK2969
	53	Screw	PBZ30P120FTB

(2) CONTRAST TABLE

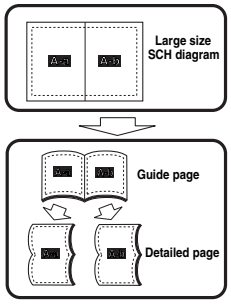
GM-5400T/XJ/UC, GM-5400T/XJ/EW5 and GM-5400T/XJ/ES are constructed the same except for the following:

Mark	No.	Description	GM-5400T/XJ/UC	GM-5400T/XJ/EW5	GM-5400T/XJ/ES
*	3	Screw	BMZ40P250FTB	Not used	Not used
	6	Holder	CNV8522	Not used	Not used
	7	Plate	CZN8435	CZN8435	CZN8435
	11	Amp Unit	CZW5578	CZW5577	CZW5577
	31	Case Unit	CZX6645	CZX6644	CZX6646
*	33	Heat Sink	CZN8444	CZN8416	CZN8416
	34	Plate Assy	CZX6639	CZX6638 CZX6639	
	35	Nut	NB40FTB	Not used	Not used
*	37	Washer	WB45FTB	Not used	Not used

10. SCHEMATIC DIAGRAM

10.1 AMP UNIT(GUIDE PAGE)

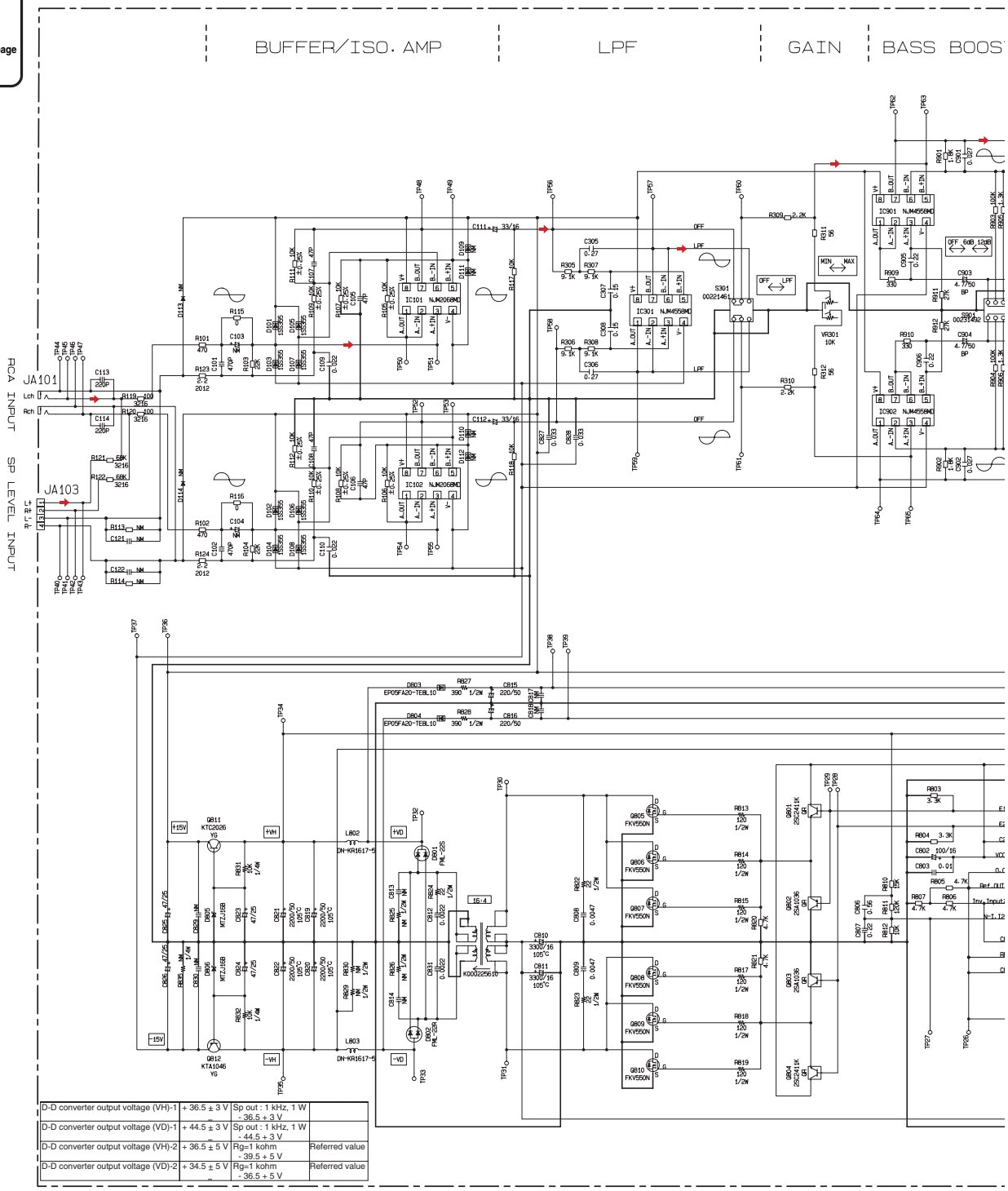
Note: When ordering service parts, be sure to refer to " EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



A-a

NOTE :
For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

Ex. *Resistors		*Capacitors	
Code	Practical value	Code	Practical value
123	12 k ohms	103	0.01 uF
103	10 k ohms	101/10	100 uF/10 V



D-D converter output voltage (VH)-1	+ 36.5 ± 3 V _ - 36.5 + 3 V	Sp out : 1 kHz, 1 W	
D-D converter output voltage (VD)-1	+ 44.5 ± 3 V _ - 44.5 + 3 V	Sp out : 1 kHz, 1 W	
D-D converter output voltage (VH)-2	+ 36.5 ± 5 V _ - 39.5 + 5 V	Rg=1 kohm	Referred value
D-D converter output voltage (VD)-2	+ 34.5 ± 5 V _ - 36.5 + 5 V	Rg=1 kohm	Referred value

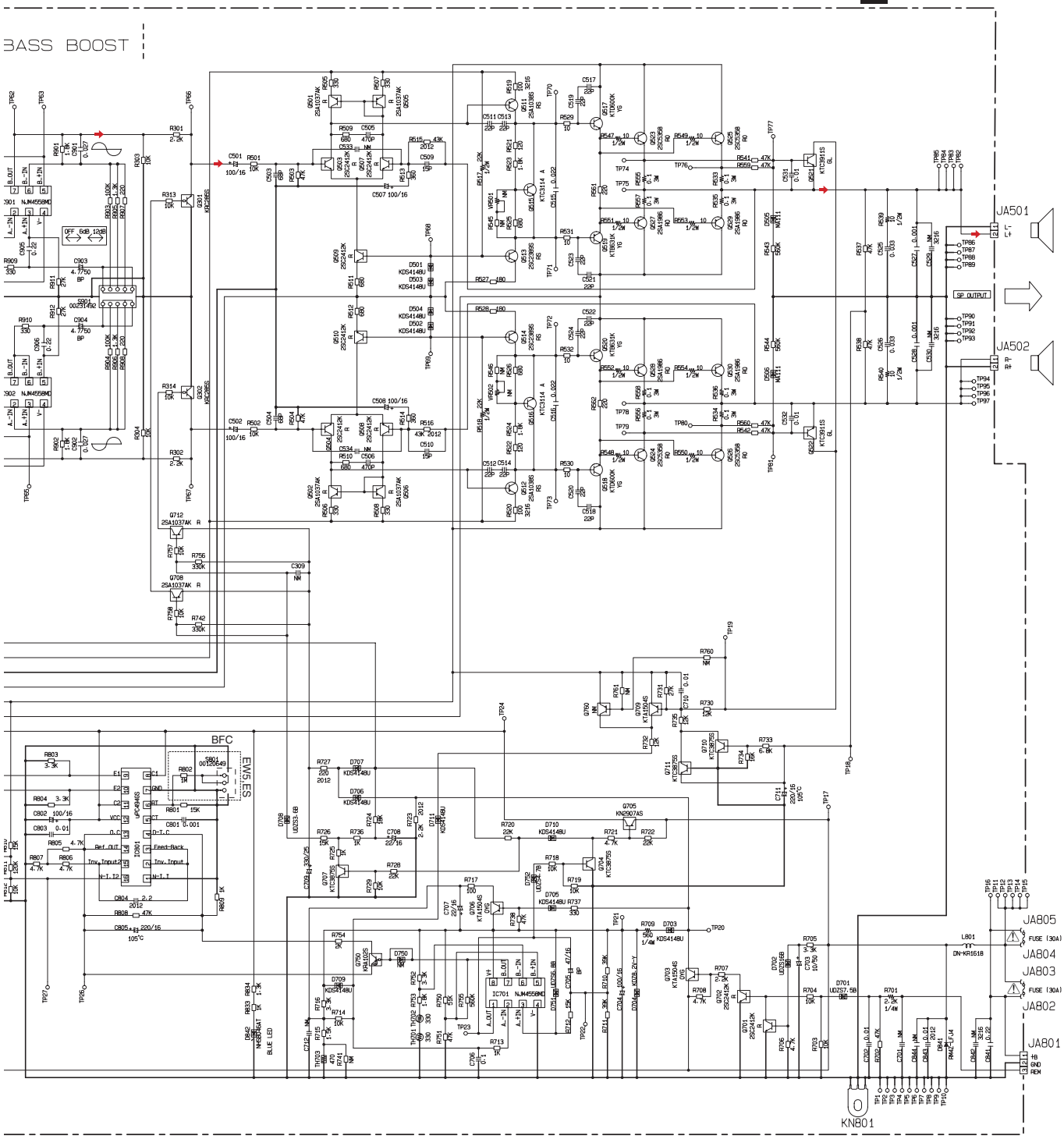
A

A-b

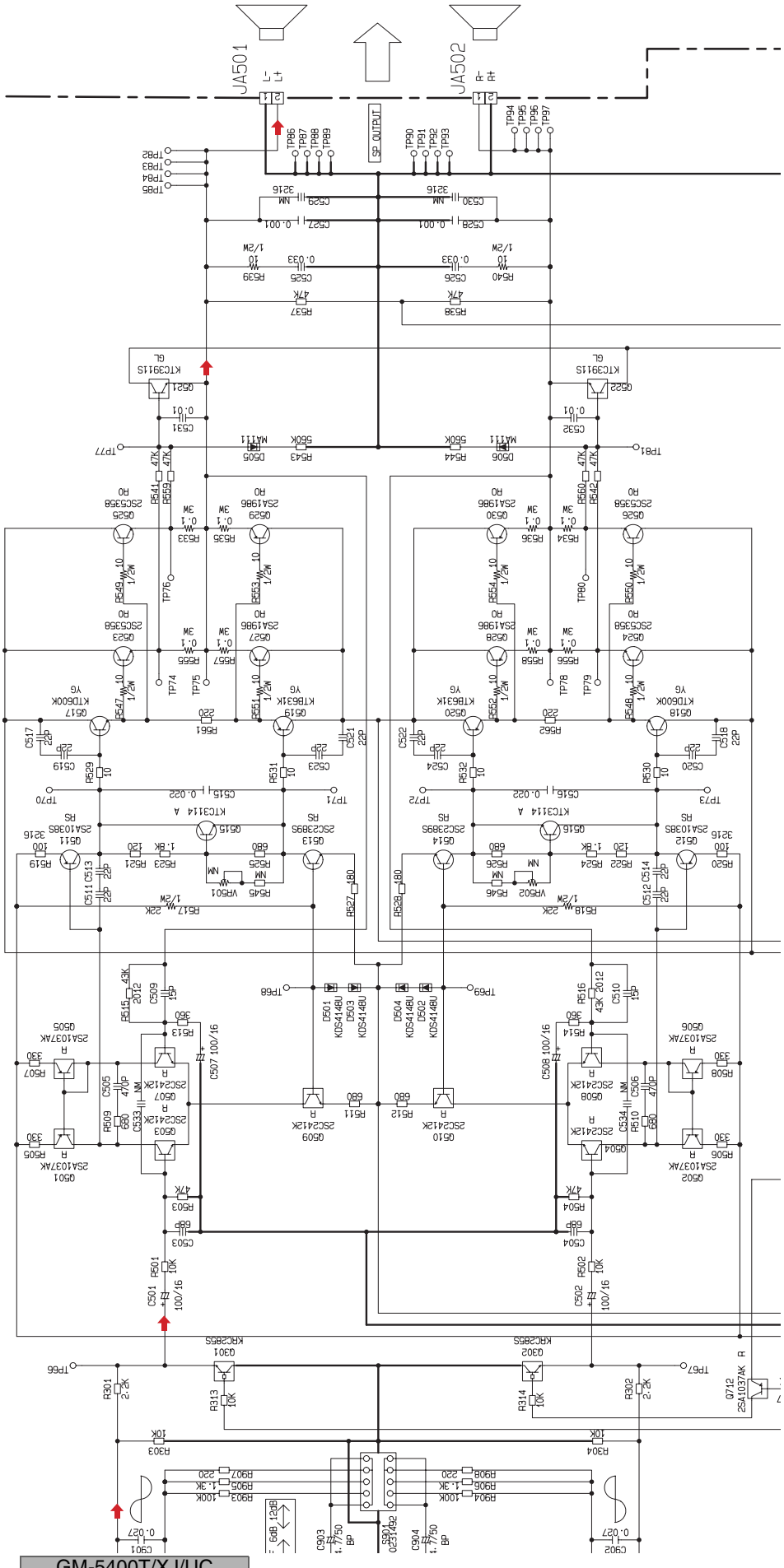
NM : No Mount

The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

A AMP UNIT



A AMP UNIT

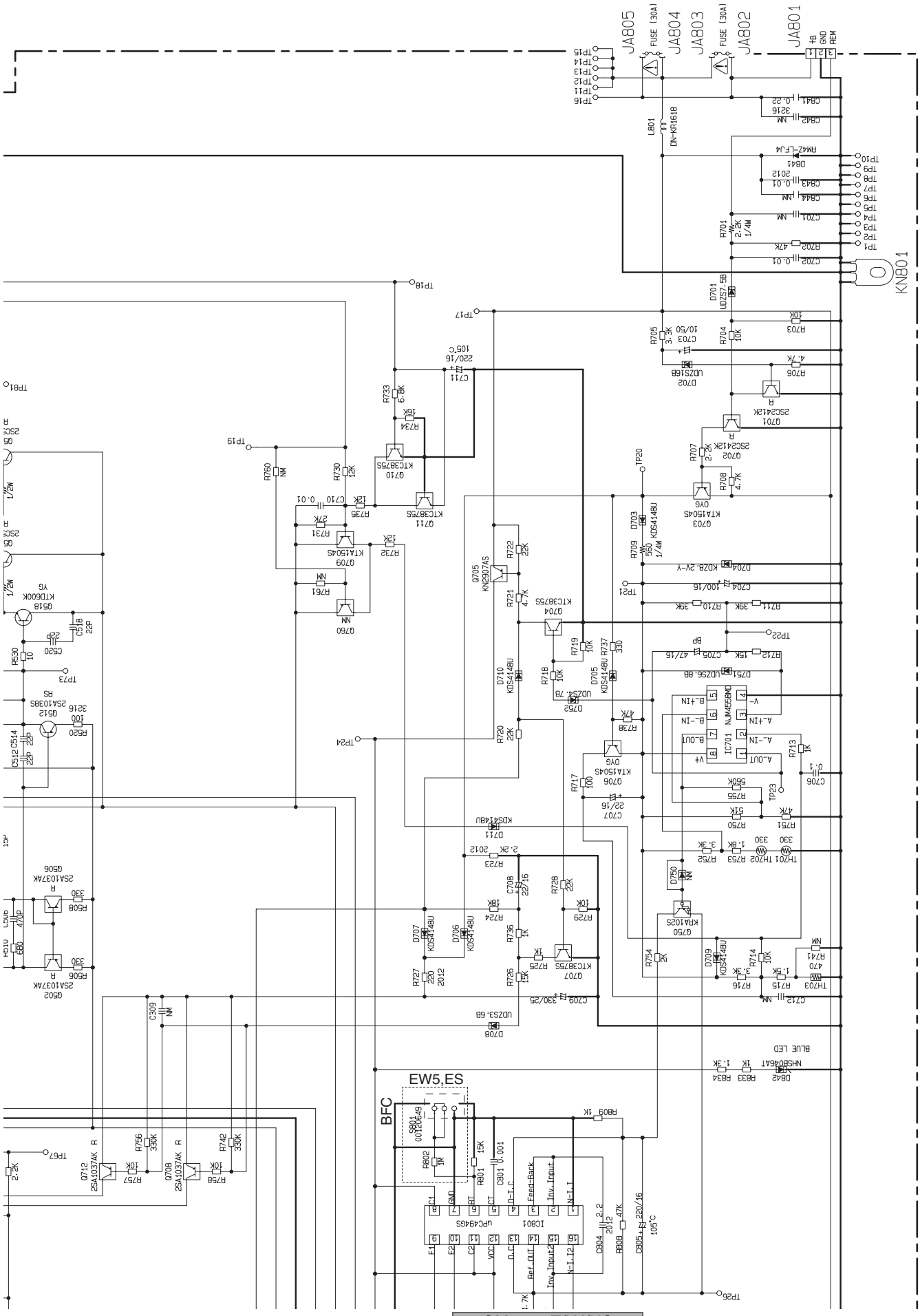


NM : No Mount

The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

A-a A-b

A-b


JA805
JA804
JA803
JA802
JA801
FUSE (30A)
FUSE (30A)
+B
GND
REM
KN801
EW5,ES
BFC
BLUE LED
IC701
NJM4558MD
IC801
UPC494GS
Q712
2SA1037AK
Q708
2SA1037AK
Q502
2SA1037AK
Q506
2SA1037AK
Q512
2SA1038S
Q514
KTD600K
Q518
KTD600K
Q701
2SC2412K
Q702
2SC2412K
Q703
KTA1504S
Q704
KTC3875S
Q705
KNC3907AS
Q706
KTA1504S
Q707
KTC3875S
Q709
KTA1504S
Q710
KTC3875S
Q711
KTC3875S
Q750
KRA102S
D701
UDZS7.5B
D703
KDS4148U
D705
KDS4148U
D706
KDS4148U
D707
KDS4148U
D708
UDZS3.6B
D709
KDS4148U
D710
KDS4148U
D711
KDS4148U
D750
NM
D751
UDZS6.8B
D752
UDZS4.7B
D801
NHSB04AT
TH701
TH702
TH703
SB01
001206649
A-b
A-a
GM-5400T/XJ/UC
19

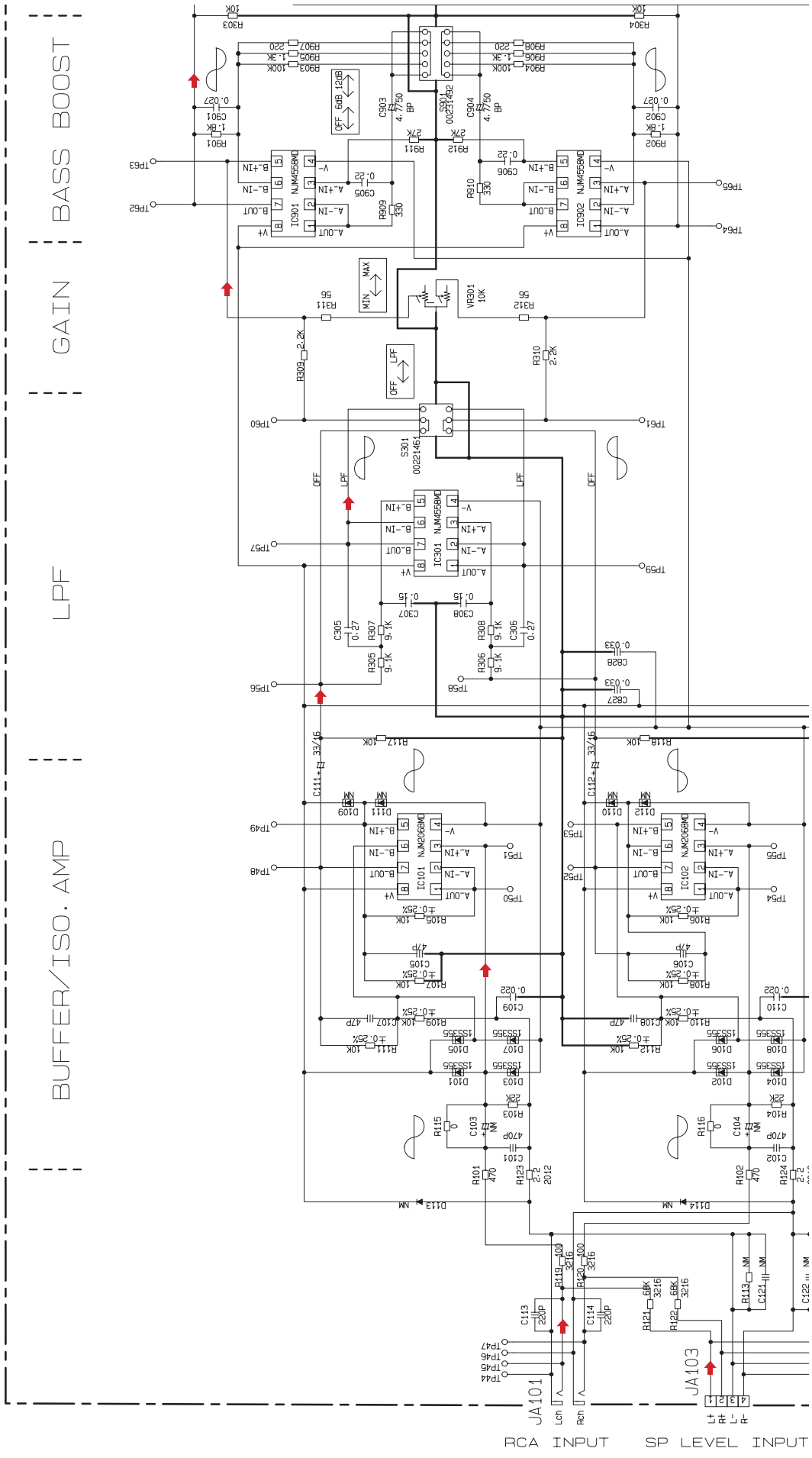
NOTE :
For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

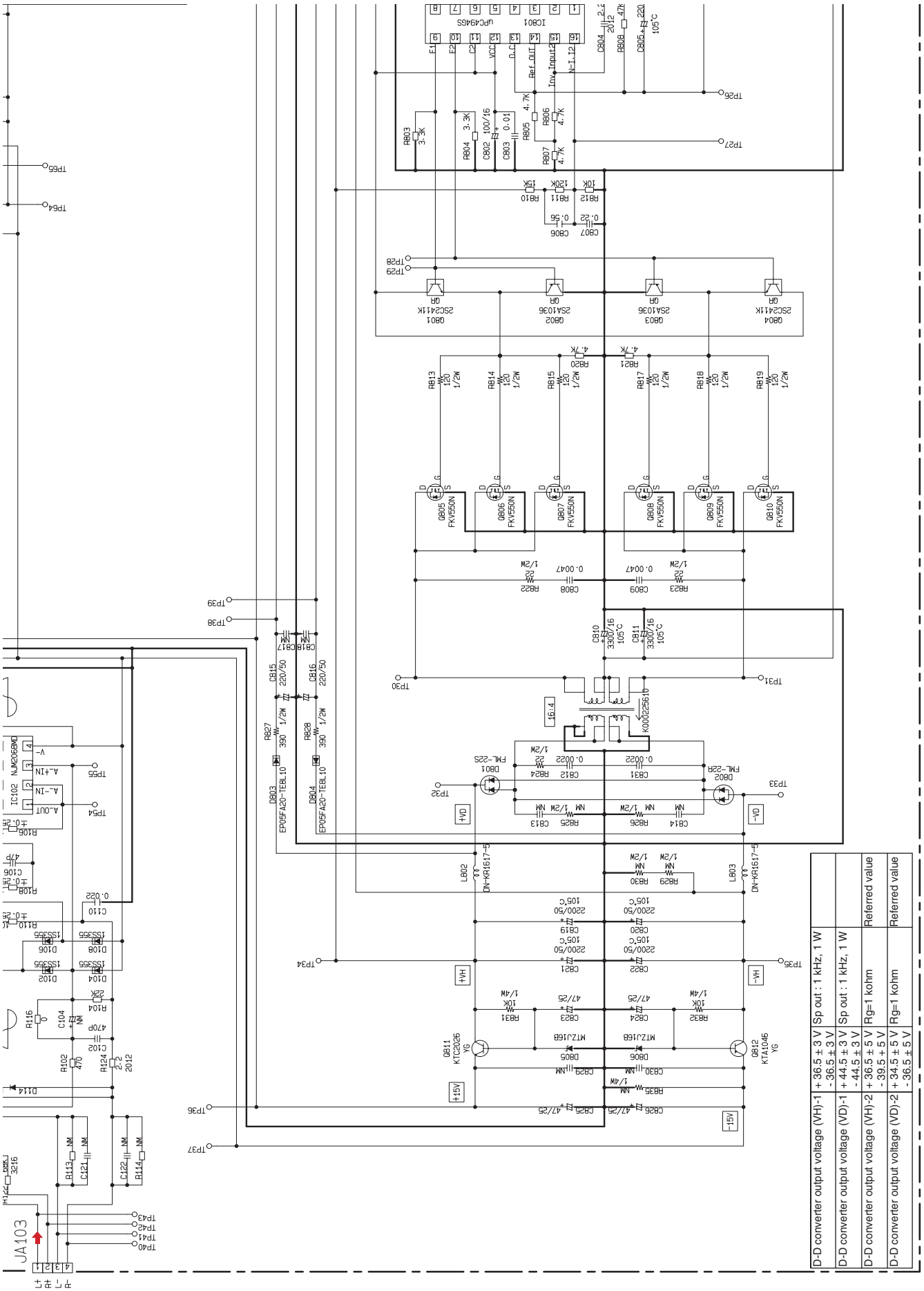
Ex. *Resistors

Code	Practical value
123	12 k ohms
103	10 k ohms

*Capacitors

Code	Practical value
103	0.01 uF
101/10	100 uF/10 V



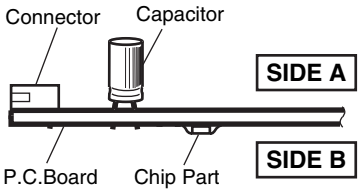

A-b
A-a
LEVEL INPUT
JA103
IC102 NJM2068MD
IC801 uPC4945S
Q801 2SC2411K
Q802 2SA1036
Q803 2SA1036
Q804 2SC2411K
Q805 FKV550N
Q806 FKV550N
Q807 FKV550N
Q808 FKV550N
Q809 FKV550N
Q810 FKV550N
Q811 KTC2026 Y6
Q812 KTA1046 Y6
D801 FML-22S
D802 FML-22H
D803 EP05FA20-TE8L10
D804 EP05FA20-TE8L10
L802 DN-KR1617-5
L803 DN-KR1617-5
K0022561G
16:4
TP26
TP27
TP28
TP29
TP30
TP31
TP32
TP33
TP34
TP35
TP36
TP37
TP38
TP39
TP40
TP41
TP42
TP43
TP54
TP55
TP64
TP65
D-D converter output voltage (VH)-1
+ 36.5 ± 3 V
- 36.5 ± 3 V
Sp out : 1 kHz, 1 W
Referred value
D-D converter output voltage (VD)-1
+ 44.5 ± 3 V
- 44.5 ± 3 V
Sp out : 1 kHz, 1 W
Referred value
D-D converter output voltage (VH)-2
+ 36.5 ± 5 V
- 39.5 + 5 V
Rg=1 kohm
Rg=1 kohm
D-D converter output voltage (VD)-2
+ 34.5 ± 5 V
- 36.5 ± 5 V

11. PCB CONNECTION DIAGRAM

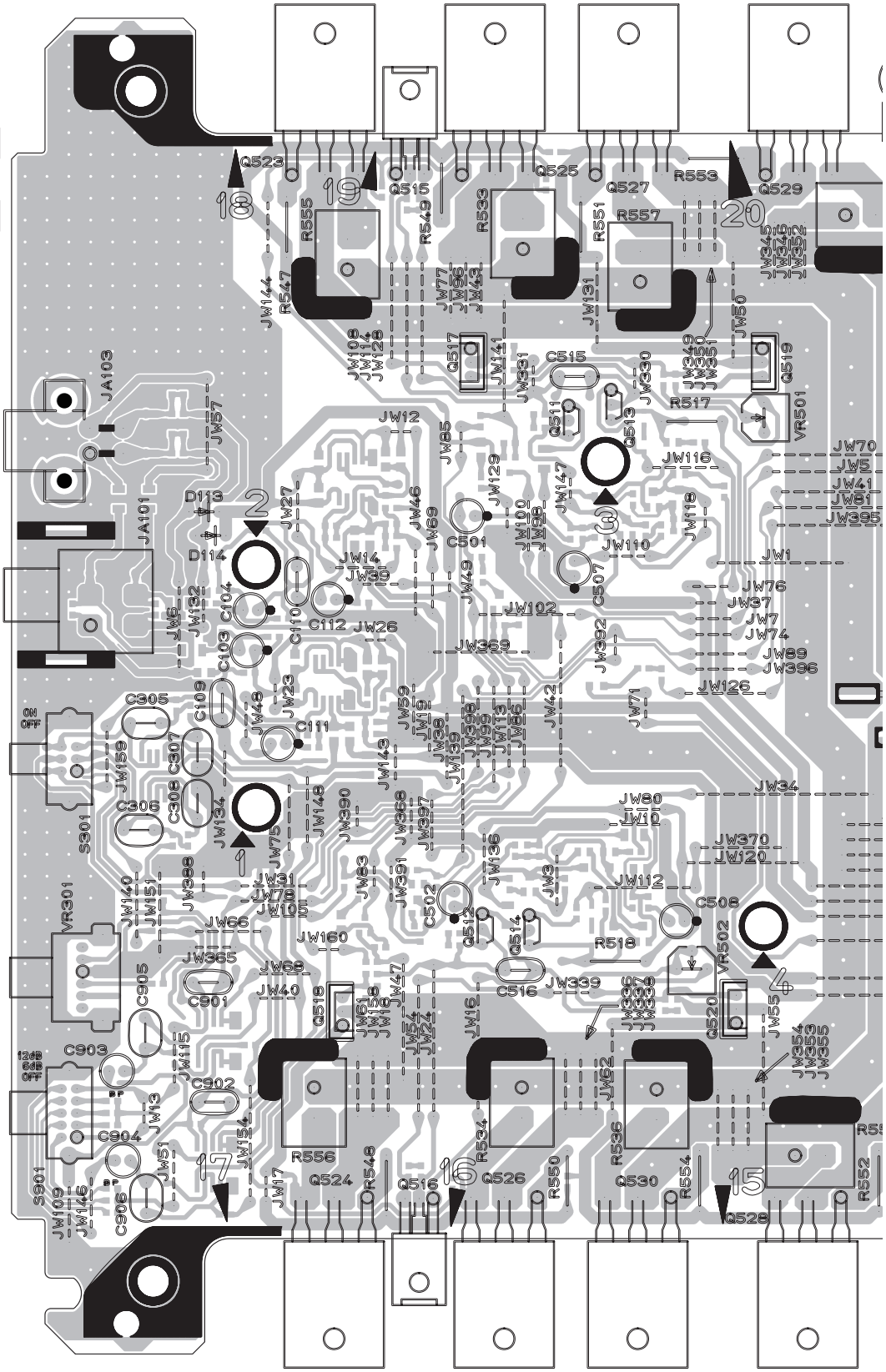
11.1 AMP UNIT

NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination. For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams

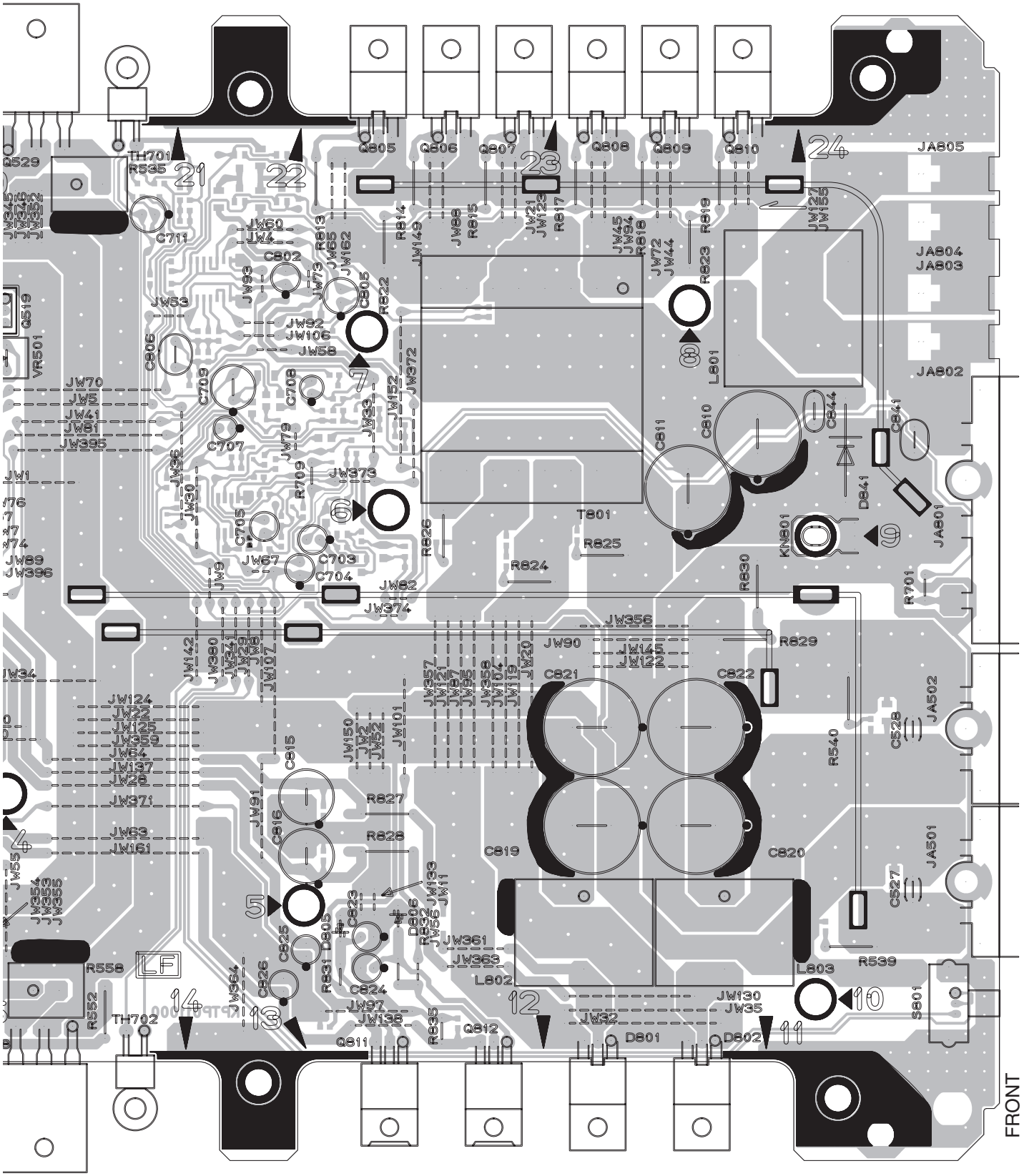


A AMP UNIT



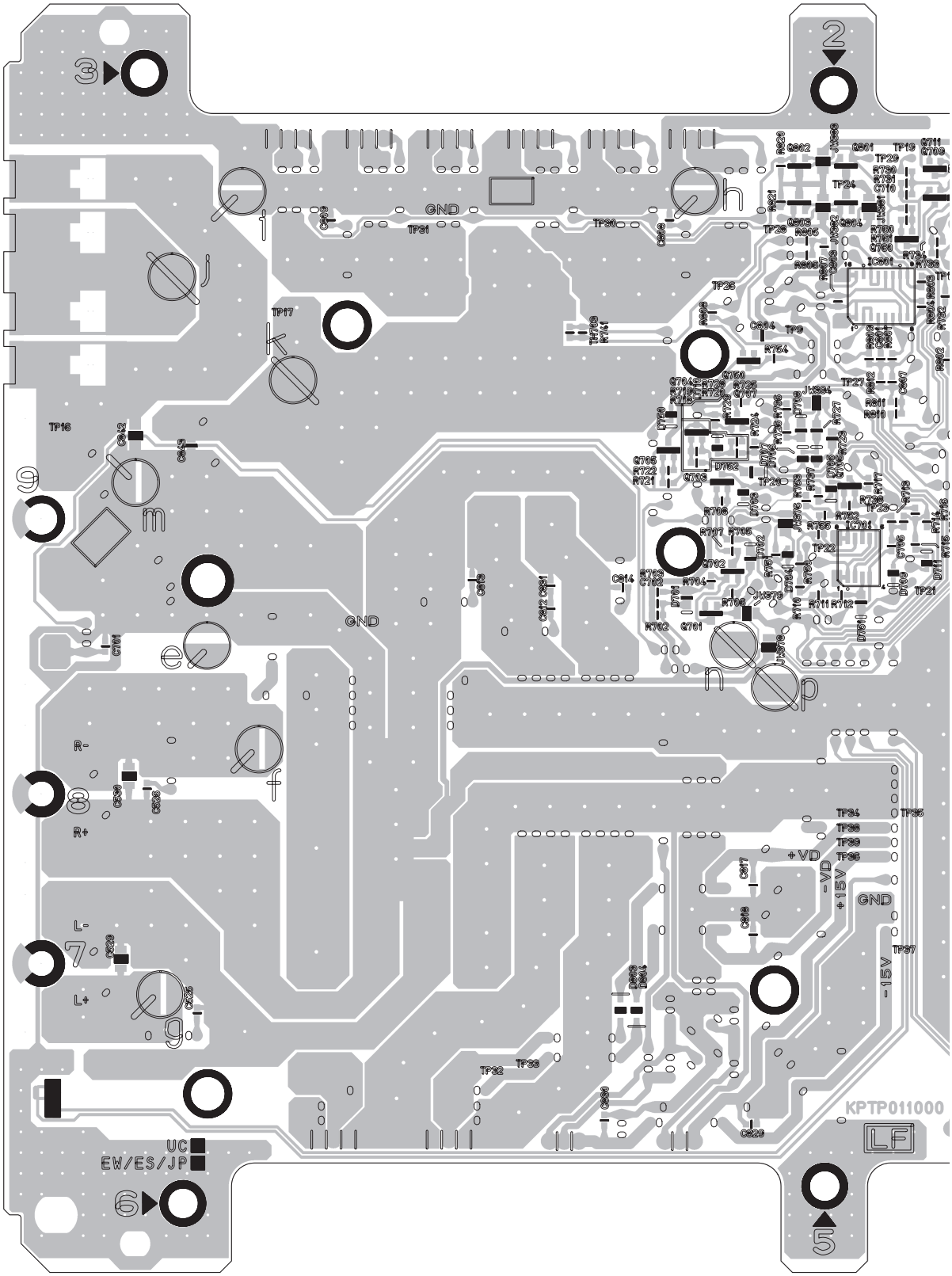
A

SIDE A

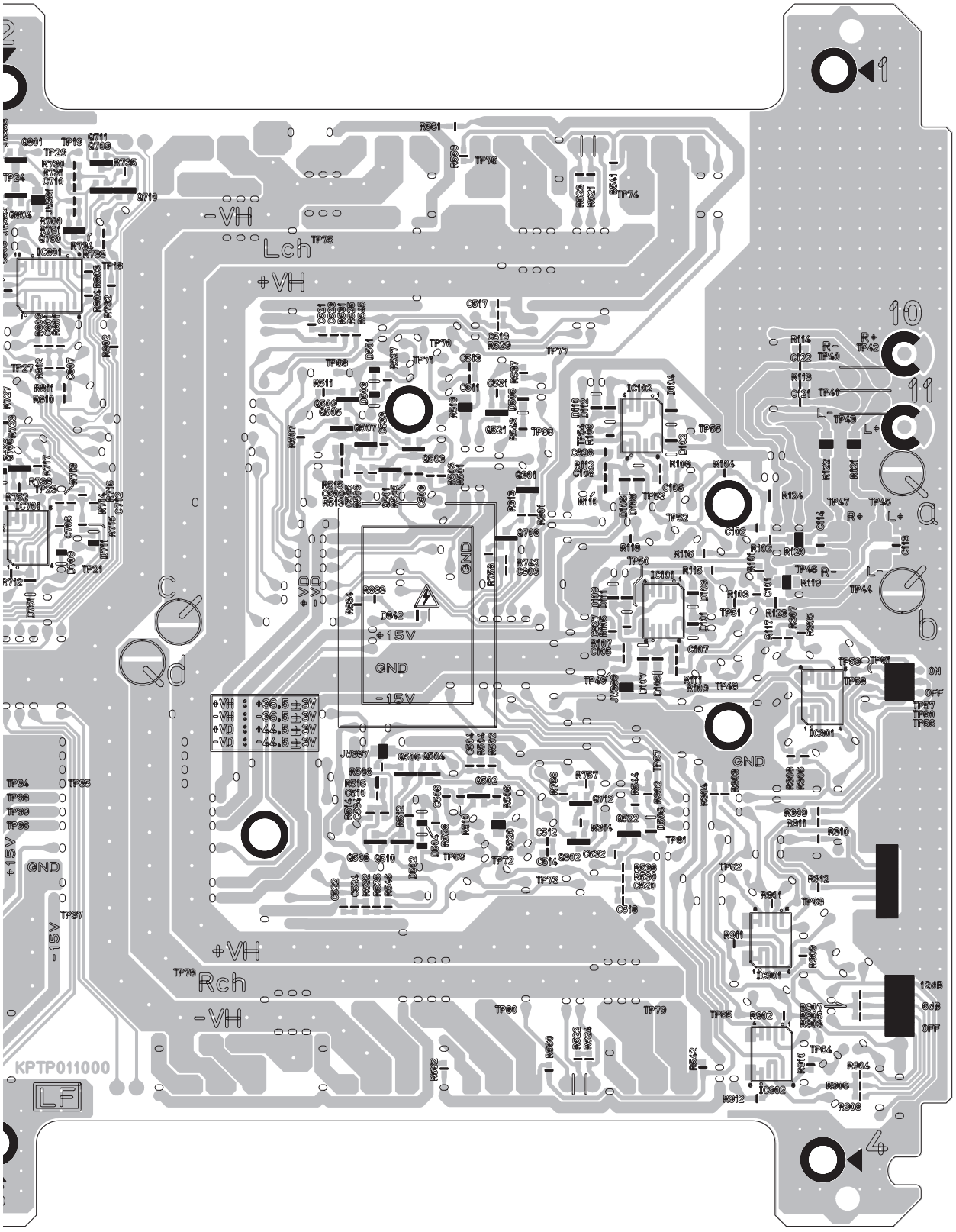

TH701
R535
C711
Q805
Q806
Q807
Q808
Q809
Q810
JA805
JA804
JA803
JA802
JA801
JA502
JA501
Q529
Q519
VR501
C802
C805
C806
C707
C708
C709
C703
C704
C705
C810
C811
C844
C841
D841
T801
L801
L802
L803
R822
R823
R824
R825
R826
R827
R828
R829
R830
R540
R539
R558
R552
TH702
Q811
Q812
D801
D802
KN801
S801
C821
C822
C819
C820
C815
C816
C823
C824
C825
C826
C827
C828
D805
D806
LF
FRONT

A

A AMP UNIT



SIDE B


-VH
Lch
+VH
+VH
Rch
-VH
GND
+15V
-15V
+VD
-VD
+VH +36.5±3V
-VH -36.5±3V
+VD +44.5±3V
-VD -44.5±3V
KPTP011000
LF
R+
R-
L+
L-
ON
OFF
12dB
6dB
OFF

12. ELECTRICAL PARTS LIST

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

  Chip Resistor

  RS1/◯S◯◯◯J,RS1/◯◯S◯◯◯J

  Chip Capacitor (except for CQS.....)

  CKS....., CCS....., CSZS.....
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Meaning of the figures and others in the parentheses in the parts list.*

  Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

  IC 301 (A, 91, 111) IC NJM2068V
- *The expression of the unit in this manual is shown by u instead of µ. Please do not make a mistake.*

A

Unit Number : CZW5578(UC)
Unit Number : CZW5577(EW5,ES)
Unit Name : Amp Unit

MISCELLANEOUS

Circuit Symbol and No.		Part No.
IC 101	IC	NJM2068MD
IC 102	IC	NJM2068MD
IC 301	IC	NJM4558MD
IC 701	IC	NJM4558MD
IC 801	IC	UPC494GS
IC 901	IC	NJM4558MD
IC 902	IC	NJM4558MD
Q 301	Transistor	KRC285S
Q 302	Transistor	KRC285S
Q 501	Transistor	2SA1037K
Q 502	Transistor	2SA1037K
Q 503	Transistor	2SC2412K
Q 504	Transistor	2SC2412K
Q 505	Transistor	2SA1037K
Q 506	Transistor	2SA1037K
Q 507	Transistor	2SC2412K
Q 508	Transistor	2SC2412K
Q 509	Transistor	2SC2412K
Q 510	Transistor	2SC2412K
Q 511	Transistor	2SA1038S
Q 512	Transistor	2SA1038S
Q 513	Transistor	2SC2389S
Q 514	Transistor	2SC2389S
Q 515	Transistor	KTC3114
Q 516	Transistor	KTC3114
Q 517	Transistor	KTD600K
Q 518	Transistor	KTD600K
Q 519	Transistor	KTB631K
Q 520	Transistor	KTB631K
Q 521	Transistor	KTC3911S
Q 522	Transistor	KTC3911S
Q 523	Transistor	2SC5358
Q 524	Transistor	2SC5358
Q 525	Transistor	2SC5358
Q 526	Transistor	2SC5358
Q 527	Transistor	2SA1986
Q 528	Transistor	2SA1986
Q 529	Transistor	2SA1986
Q 530	Transistor	2SA1986
Q 701	Transistor	2SC2412K
Q 702	Transistor	2SC2412K
Q 703	Transistor	KTA1504S
Q 704	Transistor	KTC3875S
Q 705	Transistor	KN2907AS
Q 706	Transistor	KTA1504S
Q 707	Transistor	KTC3875S
Q 708	Transistor	2SA1037K
Q 709	Transistor	KTA1504S
Q 710	Transistor	KTC3875S
Q 711	Transistor	KTC3875S
Q 712	Transistor	2SA1037K
Q 750	Transistor	KRA102S
Q 801	Transistor	2SC2411K
Q 802	Transistor	2SA1036K
Q 803	Transistor	2SA1036K
Q 804	Transistor	2SC2411K
Q 805	Transistor	FKV550N
Q 806	Transistor	FKV550N
Q 807	Transistor	FKV550N
Q 808	Transistor	FKV550N
Q 809	Transistor	FKV550N
Q 810	Transistor	FKV550N
Q 811	Transistor	KTC2026
Q 812	Transistor	KTA1046
D 101	Diode	1SS355
D 102	Diode	1SS355
D 103	Diode	1SS355
D 104	Diode	1SS355
D 105	Diode	1SS355
D 106	Diode	1SS355
D 107	Diode	1SS355

Circuit Symbol and No.		Part No.
D 108	Diode	1SS355
D 501	Diode	KDS4148U
D 502	Diode	KDS4148U
D 503	Diode	KDS4148U
D 504	Diode	KDS4148U
D 505	Diode	MA111
D 506	Diode	MA111
D 701	Diode	UDZS7R5(B)
D 702	Diode	UDZS16(B)
D 703	Diode	KDS4148U
D 704	Diode	KDZ8R2V(Y)
D 705	Diode	KDS4148U
D 706	Diode	KDS4148U
D 707	Diode	KDS4148U
D 708	Diode	UDZS3R6(B)
D 709	Diode	KDS4148U
D 710	Diode	KDS4148U
D 711	Diode	KDS4148U
D 751	Diode	UDZS6R8(B)
D 752	Diode	UDZS4R7(B)
D 801	Diode	FML22S
D 802	Diode	FML22R
D 803	Diode	EP05FA20
D 804	Diode	EP05FA20
D 805	Diode	MTZJ16(B)
D 806	Diode	MTZJ16(B)
D 841	Diode	RM4Z-LFJ4
D 842	LED	NHSB046AT
L 801	Choke Coil 45 uH	CZT2939
L 802	Choke Coil 105 uH	CZT2938
L 803	Choke Coil 105 uH	CZT2938
T 801	Transformer	CZT2940
TH701	Thermistor	CCX1057
TH702	Thermistor	CCX1057
TH703	Posistor	CZC2982
S 301	Switch(OFF/LPF)	CZS2928
S 801	Switch(BFC)(EW5,ES)	CZS2927
S 901	Switch(OFF/6dB/12dB)	CZS2929
VR301	Variable Resistor 10 kohm	CZC2975

RESISTORS

R 101		RS1/16S471J
R 102		RS1/16S471J
R 103		RS1/16S223J
R 104		RS1/16S223J
R 105	10 kohm	CCN1152
R 106	10 kohm	CCN1152
R 107	10 kohm	CCN1152
R 108	10 kohm	CCN1152
R 109	10 kohm	CCN1152
R 110	10 kohm	CCN1152
R 111	10 kohm	CCN1152
R 112	10 kohm	CCN1152
R 113		RS1/16S0R0J
R 114		RS1/16S0R0J
R 115		RS1/16S0R0J
R 116		RS1/16S0R0J
R 117		RS1/16S103J
R 118		RS1/16S103J
R 121		RS1/8S683J
R 122		RS1/8S683J
R 123		RS1/10S2R2J
R 124		RS1/10S2R2J
R 301		RS1/16S222J
R 302		RS1/16S222J
R 303		RS1/16S103J
R 304		RS1/16S103J
R 305		RS1/16S912J
R 306		RS1/16S912J
R 307		RS1/16S912J
R 308		RS1/16S912J
R 309		RS1/16S222J
R 310		RS1/16S222J
R 311		RS1/16S560J
R 312		RS1/16S560J
R 313		RS1/16S103J
R 314		RS1/16S103J
R 501		RS1/16S103J
R 502		RS1/16S103J
R 503		RS1/16S473J
R 504		RS1/16S473J
R 505		RS1/16S331J
R 506		RS1/16S331J
R 507		RS1/16S331J
R 508		RS1/16S331J
R 509		RS1/16S681J
R 510		RS1/16S681J
R 511		RS1/16S681J
R 512		RS1/16S681J
R 513		RS1/16S361J
R 514		RS1/16S361J
R 515		RS1/10S433J
R 516		RS1/10S433J
R 517		RD1/2PM223J
R 518		RD1/2PM223J
R 519		RS1/8S101J
R 520		RS1/8S101J
R 521		RS1/16S121J
R 522		RS1/16S121J
R 523		RS1/16S182J
R 524		RS1/16S182J
R 525		RS1/16S681J
R 526		RS1/16S681J
R 527		RS1/16S181J
R 528		RS1/16S181J
R 529		RS1/16S100J
R 530		RS1/16S100J
R 531		RS1/16S100J
R 532		RS1/16S100J
R 533	0.1 ohm(3 W)	CZC2973
R 534	0.1 ohm(3 W)	CZC2973
R 535	0.1 ohm(3 W)	CZC2973
R 536	0.1 ohm(3 W)	CZC2973
R 537		RS1/16S473J
R 538		RS1/16S473J
R 539		RD1/2PM100J
R 540		RD1/2PM100J
R 541		RS1/16S473J
R 542		RS1/16S473J
R 543		RS1/16S564J

Circuit Symbol and No.		Part No.
R 544		RS1/16S564J
R 547		RD1/2PM100J
R 548		RD1/2PM100J
R 549		RD1/2PM100J
R 550		RD1/2PM100J
R 551		RD1/2PM100J
R 552		RD1/2PM100J
R 553		RD1/2PM100J
R 554		RD1/2PM100J
R 555	0.1 ohm(3 W)	CZC2973
R 556	0.1 ohm(3 W)	CZC2973
R 557	0.1 ohm(3 W)	CZC2973
R 558	0.1 ohm(3 W)	CZC2973
R 559		RS1/16S473J
R 560		RS1/16S473J
R 561		RS1/16S221J
R 562		RS1/16S221J
R 701	2.2 kohm(1/4 W)	CZC2980
R 702		RS1/16S473J
R 703		RS1/16S103J
R 704		RS1/16S103J
R 705		RS1/16S332J
R 706		RS1/16S472J
R 707		RS1/16S222J
R 708		RS1/16S472J
R 709	560 ohm(1/4 W)	CZC2981
R 710		RS1/16S393J
R 711		RS1/16S393J
R 712		RS1/16S153J
R 713		RS1/16S102J
R 714		RS1/16S103J
R 715		RS1/16S152J
R 716		RS1/16S332J
R 717		RS1/16S101J
R 718		RS1/16S103J
R 719		RS1/16S103J
R 720		RS1/16S223J
R 721		RS1/16S472J
R 722		RS1/16S223J
R 723		RS1/10S222J
R 724		RS1/16S183J
R 725		RS1/16S102J
R 726		RS1/16S153J
R 727		RS1/10S221J
R 728		RS1/16S223J
R 729		RS1/16S103J
R 730		RS1/16S123J
R 731		RS1/16S273J
R 732		RS1/16S123J
R 733		RS1/16S682J
R 734		RS1/16S163J
R 735		RS1/16S123J
R 736		RS1/16S102J
R 737		RS1/16S331J
R 738		RS1/16S473J
R 742		RS1/16S334J
R 743		RS1/16S472J
R 750		RS1/16S513J
R 751		RS1/16S473J
R 752		RS1/16S332J

Circuit Symbol and No.		Part No.
R 753		RS1/16S182J
R 754		RS1/16S202J
R 756		RS1/16S334J
R 757		RS1/16S103J
R 758		RS1/16S103J
R 801		RS1/16S153J
R 802	(EW5,ES)	RS1/16S105J
R 803		RS1/16S332J
R 804		RS1/16S332J
R 805		RS1/16S472J
R 806		RS1/16S472J
R 807		RS1/16S472J
R 808		RS1/16S473J
R 809		RS1/16S102J
R 810		RS1/16S153J
R 811		RS1/16S124J
R 812		RS1/16S103J
R 813		RD1/2PM121J
R 814		RD1/2PM121J
R 815		RD1/2PM121J
R 817		RD1/2PM121J
R 818		RD1/2PM121J
R 819		RD1/2PM121J
R 820		RS1/16S472J
R 821		RS1/16S472J
R 822		RD1/2PM220J
R 823		RD1/2PM220J
R 824		RD1/2PM220J
R 827		RD1/2PM391J
R 828		RD1/2PM391J
R 831	10 kohm(1/4 W)	CZC2979
R 832	10 kohm(1/4 W)	CZC2979
R 833		RS1/16S102J
R 834		RS1/16S132J
R 901		RS1/16S182J
R 902		RS1/16S182J
R 903		RS1/16S104J
R 904		RS1/16S104J
R 905		RS1/16S132J
R 906		RS1/16S132J
R 907		RS1/16S221J
R 908		RS1/16S221J
R 909		RS1/16S331J
R 910		RS1/16S331J
R 911		RS1/16S273J
R 912		RS1/16S273J

CAPACITORS

C 101	CCSRCH471J50
C 102	CCSRCH471J50
C 105	CCSRCH470J50
C 106	CCSRCH470J50
C 107	CCSRCH470J50
C 108	CCSRCH470J50
C 109	CFTLA223J50
C 110	CFTLA223J50
C 111	CEAT330M16
C 112	CEAT330M16
C 113	CCSRCH221J50

Circuit Symbol and No.		Part No.
C 114		CCSRCH221J50
C 305		CFTLA274J50
C 306		CFTLA274J50
C 307		CFTLA154J50
C 308		CFTLA154J50
C 501		CEAT101M16
C 502		CEAT101M16
C 503		CCSRCH680J50
C 504		CCSRCH680J50
C 505		CCSRCH471J50
C 506		CCSRCH471J50
C 507		CEAT101M16
C 508		CEAT101M16
C 509		CCSRCH150J50
C 510		CCSRCH150J50
C 511		CCSRCH220J50
C 512		CCSRCH220J50
C 513		CCSRCH220J50
C 514		CCSRCH220J50
C 515		CFTLA223J50
C 516		CFTLA223J50
C 517		CCSRCH220J50
C 518		CCSRCH220J50
C 519		CCSRCH220J50
C 520		CCSRCH220J50
C 521		CCSRCH220J50
C 522		CCSRCH220J50
C 523		CCSRCH220J50
C 524		CCSRCH220J50
C 525		CKSRYB333K50
C 526		CKSRYB333K50
C 527		CQMA102J50
C 528		CQMA102J50
C 531		CKSRYB103K50
C 532		CKSRYB103K50
C 702		CKSRYB103K50
C 703		CEJQ100M50
C 704		CEAT101M16
C 705		CEANP470M16
C 706		CKSRYB104K50
C 707		CEJQ220M16
C 708		CEJQ220M16
C 709		CEAT331M25
C 710		CKSRYB103K50
C 711		CEAT221M16
C 801		CCSRCH102J50
C 802		CEAT101M16
C 803		CKSRYB103K50
C 804		CKSQYB225K10
C 805		CEAT221M16
C 806		CFTLA564J50
C 807		CKSRYB224K16
C 808		CKSRYB472K50
C 809		CKSRYB472K50
C 810	3 300 uF/16 V	CZC2977
C 811	3 300 uF/16 V	CZC2977
C 812		CCSRCH222J50
C 815		CEAT221M50
C 816		CEAT221M50
C 819	2 200 uF/50 V	CZC2976
C 820	2 200 uF/50 V	CZC2976
C 821	2 200 uF/50 V	CZC2976
C 822	2 200 uF/50 V	CZC2976
C 823		CEAT470M25
C 824		CEAT470M25
C 825		CEAT470M25
C 826		CEAT470M25
C 827		CKSRYB333K50
C 828		CKSRYB333K50
C 831		CCSRCH222J50
C 841		CFTLA224J50
C 843		CCSQCH103J50
C 901		CFTLA273J50
C 902		CFTLA273J50
C 903		CEANP4R7M50
C 904		CEANP4R7M50
C 905		CFTLA224J50
C 906		CFTLA224J50